

This listing of claims presented below replaces all prior versions and listings of claims in the application.

### Listing of Claims

#### IN THE CLAIMS

1. (Currently Amended) Method to evaluate the integrity of chromatin/DNA and animal sperm comprising:

a) ~~a treatment step of the~~ treating a sample containing the sperm, with a solution of DNA denaturing solution,

b) a single ~~treatment step~~ treating the sample in the solution with a lysis solution to extract the nuclear proteins, and

c) ~~an evaluation stage of~~ evaluating the integrity of the chromatin/DNA of the sperm ~~characterised because~~ as the lysis solution does not contain protein denaturing detergents and essentially does not destroy the ~~tails~~ tail of the sperm.

2. (Currently Amended) Method according to claim 1, ~~characterised in that stage~~ wherein step a) precedes that of b), or it ~~only~~ proceeds to steps b) and c).

3. (Currently Amended) Method according to claim 1, ~~characterised in that~~ wherein the lysis solution comprises ~~of~~ a non-ionic non protein denaturing detergent.

4. (Currently Amended) Method according to claim 1 ~~3~~, ~~characterised in that~~ wherein the non ionic detergent is selected from the group consisting of toctylphenoxypolyethoxyethanol (Triton X-100), N , N-bis(3-D-Gluconamidopropyl) cholamide (bigCHAP), Brij(r) 35 P, N-decanoyl-N-methylglucamine, digitonin, dodecanoyl-N-methylglucamide, heptanoyl-N-methylglucamide, branched octylphenoxy poly (ethyleneoxy) ethanol (Igepal CA-630), N-Nonanoyl-N-methylglucamine, Nonidet P 40, N-Octanoyl-N-methylglucamine, Span 20 solution, Polysorbate 20 (Tween 20) and ~~their mixtures, preferably Triton X-100~~ a mixture thereof.

5. (Currently Amended) Method according to claim 1, ~~characterised in that~~ wherein the lysis solution comprises sodium chloride between 1 and 3M, dithiothreitol (DTT) between 0.001 and 2M, 2-amino-2 (hydroxymethyl)-1,3-propanediol (Tris) between 0.001M and 2 M and Triton X-100 between 0.1% and 3%.
6. (Currently Amended) Method according to claim 1, ~~characterised in that~~ wherein the lysis solution comprises 2.5M sodium chloride, ~~around~~ about 0.2M DTT, ~~around~~ about 0.2M Tris, ~~around~~ about 1% Triton X-100 and a pH of ~~around~~ about 7.5.
7. (Currently Amended) Method according to claim 1, ~~characterised in that~~ wherein the DNA denaturing solution is acid.
8. (Currently Amende) Method according to claim 7, ~~characterised in that~~ wherein the DNA denaturing solution comprises an acid selected from ~~the~~ hydrochloric, acetic, nitric acid ~~group or a mixtures of these~~ mixture thereof.
9. (Currently Amended) Method according to claim 8, ~~characterised in that~~ wherein the DNA denaturing solution comprises hydrochloric acid.
10. (Currently Amended) Method according to claim 1, ~~characterised in that~~ wherein after steps a) and b) there is a sample staining step.
11. (Currently Amended) Method according to claim 10, ~~characterised in that~~ wherein the staining is made with a Wright type solution.
12. (Currently Amended) Method according to claim 11, ~~characterised in that~~ wherein the sample containing the sperm is included in a medium similar to a suspension[[,]] ~~preferably in a microgel~~.
13. (Currently Amended) Method according to claim 12, ~~characterised in that~~ wherein the sample containing the sperm is included in an agarose microgel.

14. (Currently Amended) ~~Kit~~ A kit for the evaluation of the quality of the sperm of animals which comprises:

- a) a DNA denaturing solution,
- b) a lysis solution to extract nuclear proteins, and
- c) instructions for treating the sperm and evaluating the integrity of the chromatin/DNA of the sperm.

~~characterised in that~~ wherein the lysis solution does not contain a protein denaturing detergent and essentially does not destroy the ~~tails~~ tail of the sperm.

15. (Currently Amended) ~~Kit~~ The kit according to claim 14, ~~characterised in that~~ wherein the lysis solution comprises sodium chloride between 1M and 3M , dithiothreitol (DTT) between 0.001M and 2 M, 2-amino-2 (hydroxymethyl)-1,3 propanediol (Tris) between 0.001M and 2 M and Triton X-100 between 0.1% and 3%.

16. (New) The method according to claim 4, wherein the non ionic detergent is Tritonx X-100.

17. (New) The method according to claim 12, wherein the medium is a microgel.